

THE FEAR FOR LIVESTOCK SUBSECTOR AMIDST COVID-19 VARIANTS: THE CASE OF NIGER STATE FARMERS

Abdul-Gafar, A.,¹, Saifullah, A², Idris N¹, Baba-Kenneth C¹ and Abubakar U¹

1. *Department of Agricultural Economics and Extension Services, Faculty of Agriculture, Ibrahim Badamasi Babangida University*
2. *Department of Statistics, Waziri Umaru Federal Polytechnic, Birnin Kebbi, Kebbi State, Nigeria*

Corresponding author's email: abdulgafar@ibbu.edu.ng

Abstract

There are possibilities of animal-to-human coronavirus transmission, thus this possibility should be of great concern in the future. This chance should not be taken lightly as the impact, especially on the livestock subsector could have a greater adverse economic impact than the year 2020/2021 COVID-19 impact. This research aims at assessing the impact of COVID-19 on Niger State livestock farmers and then with contemporary literature, provide containment measures for containing any animal-to-human infection in case of a possible scenario. The result presents how the pandemic affected the livestock subsector. Biosecurity measures were suggested for proactive, reactive, and general policy.

Keywords: Livestock subsector, COVID-19 variants, Biosecurity, Niger State

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Introduction

Economically, livestock is a source of livelihood for the farmers, it serves as a source of wealth creation, and it also serves as a means of festive sacrifices, ceremonies, and as well as socio-political esteem. Most Nigerian livestock farmers operate small to medium-scale farms influenced by traditional methods that involve cheap feeds (usually a free range) and health supervision. Recently there has been a dramatic development in the subsector, especially in poultry and fish farming. with an increase in livestock population comes the risk of infections either among the livestock or between livestock and human. An example of livestock-to-human is the avian influenza case recorded in January 2007 in Lagos, Nigeria (FMARD, 2022). Subsequently, the outbreak re-emerged in 2015, 2019, and 2021 (Izuaka, 2021). Animal-to-human infection is known as zoonosis and this can happen in various ways. For example, direct contact with an infected animal (saliva, urine, blood, mucus, feces, or body fluid); indirect contact (surfaces, objects); vector-borne (bites from an insect); food-borne; and waterborne.

As the world go through the phase of COVID-19, many sectors were adversely affected by various measures utilized to contain the virus thus impeding the smooth running of production activities in the agricultural sector (Bukari *et al.*, 2022; Ahmed 2022¹; Ahmed 2022²; Barman, 2021; Ibukun and Adebayo, 2021; Shahzad *et al.*, 2021; Opazo *et al.*, 2020). So far, the impact of the COVID-19 pandemic on the livestock subsector has been indirect. Cost of feed and low purchasing power of the consumers as a result of loss of jobs or poor returns in business (Folayan, 2021; Laborde, 2020) has been some of the factors limiting the livestock subsector in the pandemic. The impact

on feed is consequent to lockdown, panic buys, unavailability of critical crop production inputs, and suspension of crop farming by some farmers (Ahmed 2022¹; Opazo *et al.*, 2020).

With the rate at which the variants are mutating and spreading throughout the world, it is only a matter before new lockdowns will be initiated. Bashor *et al.* (2021) suggested that animals could be the source of the mutations. Just as Livestock provides food, fiber, livelihood, and tractor among other benefits to humans, on one hand, there is the risk of humans getting infected by any of the animals carrying any form of the disease. Possibilities of having animal-to-human coronavirus transmission are slim but cases were seen in farmed mink (Europe and USA), white-tailed deer (Canada), pets (Hong Kong), and Thailand – a cat (CDC, 2021). COVID-19 variants develop through mutations and are referred to as a variant of concern when they possess a strong impact on transmissibility, severity, or immunity to vaccines. The University of Leeds research led by Grace (2022) Opined that there is a high chance that the infamous SARS-CoV-2 was originally transmitted to humans through an animal in the Wuhan animal market, China (Worobey *et al.*, 2022; Sharun *et al.*, 2021; Bashor *et al.*, 2021; Shi *et al.*, 2020). This possibility should not be taken lightly as the impact, especially on the livestock subsector could have a greater adverse economic impact than the year 2020/2021 COVID-19 impact.

In light of this context, this research aims to assess the impact of the pandemic on Niger State livestock production activities using empirical data from the 2020/2021 survey, this will provide pivotal information about the behavior of the farmers during the crisis and then with contemporary researches, suggest effective containment measures should in case animal-to-human infection is observed.

Material and Methods

Study Area

Primary and secondary data were utilized in this research. The primary data was collected using a structured questionnaire during the 2020/2021 COVID-19 pandemic crisis in Niger State. The secondary data are fetched from several works of literature on quarantine/containment of diseases that emanate from livestock which are then compared with the existing structure to identify strengths and lapses. On the primary data, about 33 medium and large-scale livestock farmers were interviewed. The data are subjected to descriptive statistics.

Results and Discussion

Farmers Demography

Table 1: Demography of the livestock farmers

	Category	Niger State
Age in years	Mean	31
	Gender	
Gender	Female	6.1%
	Male	93.9%
Marital Status	Married	66.7%
	Single	33.3%
Household size	Mean	6
Years of Education	Mean	13.2
Residency	Rural	51.5%
	Urban	48.5%
Location of farm	Rural	69.7%
	Urban	30.3%

Source: Field survey data 2020/2021.

Table 1 presents the demography of the livestock farmers. On average the age of the farmers is 31 years. About 66.7% are married and 33.3% are single. The male (93.9%) dominates the female (6.1%) livestock farmers. The farmers are relatively domiciled equally in rural and urban regions: rural residents (51.2%) and urban residents (48.5%). Most of the respondents (69.7%) have their farms located in rural regions.

COVID-19 Awareness and adherence to containment rules.

Table 2: Demography of the livestock farmers

	Category	Percentage
Do you believe COVID-19 exists?	No	3%
	Yes	97%
Have you ever witnessed any COVID-19 case?	No	75.8%
	Yes	24.2%
Do you think you can be infected by COVID-19?	No	6.1%
	Yes	93.9%
How frequently do wear a facemask?	Do not wear	0.0%
	Rarely wear	0.0%
	Occasionally wear	9.1%
	Often wear	24.2%
	Always wear	66.7%

Source: Field survey data 2020/2021.

As shown in Table 2, most of the farmers (97%) are well informed on the existing effects of COVID-19. About 24.2% witnessed COVID-19 cases in their locality. Despite the phenomenon of the cases, death, and recovery from the virus, some respondents (6.1%) believed they cannot be infected by the virus. Surprisingly, most of the farmers adhere to wearing a facemask. None of the farmers reported not wearing a facemask.

Farm enterprises

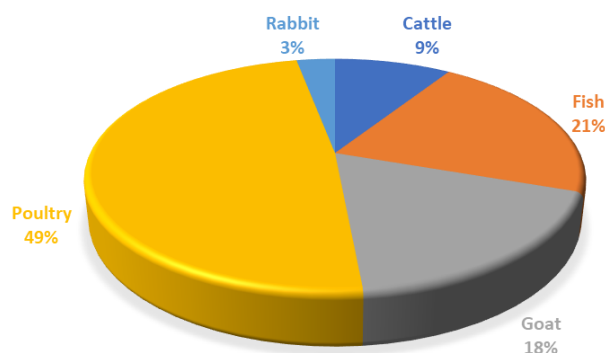


Figure 1: Primary (major) livestock of the farmers

The primary (major) livestock reared by the farmers is presented in Figure 1. About half of the respondents (49%) are poultry farmers, followed by fish farmers (21%), goat farmers (18%), cattle (9%), and rabbits (3%). The farmers rear different livestock, some combine 2-3 different livestock. The highest inter-farming observed was poultry-fish farming. About 18% of the farmers practiced poultry-fish farming. Other combinations of livestock observed were less than 6%. The farm scale differs on different farms and this is presented in Table 3.

Table 3: Major livestock farm-scale practiced by the farmers

Farm scale (live animal)	Cattle	Fish	Goat	Poultry	Rabbit
Less than 20	–	–	15.2%	–	–
21 – 100	3%	–	3%	–	3%
101 – 300	6.1%	–	–	42.4%	–
301 – 1,000	–	–	–	6.1%	–
3,000 – 5,000	–	15.2%	–	–	–
5,001 – 10,000	–	6.1%	–	–	–

Source: Field survey data 2020/2021.

About 30.4% of the farmers operate medium-scale and the remaining 69.6% practice small- and semi-medium-scale. The cattle and farmers practice medium-scale farming systems, while others – the goat, poultry, and rabbit farmers practice small-scale.

Impact of the COVID-19 pandemic on livestock

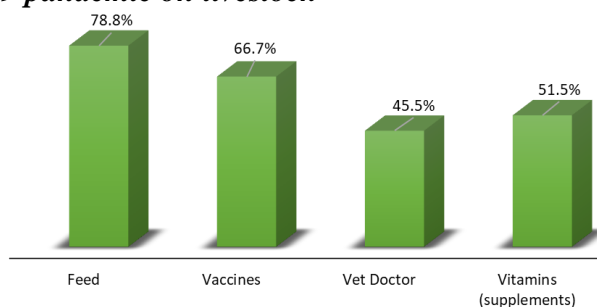


Figure 2: Challenges experienced during the COVID-19 pandemic

Figure 2 depicts the challenges the Niger state livestock farmers faced during the 2020/2021 pandemic crisis. The complaints of the farmers centered on four (4) factors: the cost and availability of feeds, vaccines, veterinary doctors, and vitamins (supplements) for their livestock. Top in these complaints is the high cost of feed and its availability, about 78.8% of the farmers reported this case. This is followed by vaccines (66.7%), vitamins/supplements (51.5%), and the availability of vet doctors on the premises. This information is paramount as it can provide focus to policymakers on issues to prioritize case of crisis.

The fear for livestock is a new case

Livestock farmers: livestock farmers fear not only the loss of their investment but possible animal-to-human infection. Farms that are not affected by outbreaks are even affected indirectly as the public fear unknown linkages. The farmers need to be assured by the government on taking timely actions to prevent, protect and control any outbreaks in the state. The livestock farmers also play a crucial part in reducing the impact of any outbreak by following the recommended measures.

Research: so far there has been no significant covid-19 infectious rate between animals and man. Nonetheless, cases were seen in some regions such as Europe and USA (farmed mink), Canada (white-tailed deer), Hong Kong (pet), and Thailand (cat). It is also believed that these cases may have been a transmission from man to animals and then back to man again as variants (CDC, 2021). Despite, these possibilities, researchers reassure that infection is more likely to be among humans than between animals and humans.

Government: the priority of any government is to protect its citizens against any threat to life, or business. Governments all over the world have proven this during the early face of the COVID-19 crisis and continue to play a vital role in curbing the virus. These come at a cost of choosing what sector needs what and at what level. This is where researchers come in to streamline issues to policymakers for efficient and effective measures.

Conclusion and Recommendations

The extent of any negative impact of any pandemic on livestock depends on many factors one of which is the time and effectiveness of decision makers' responses. Policy measures should not only adjust to the new "normal" but also set partway for rebuilding and future resilience. This research aims to assess the impact of the pandemic on Niger State livestock production activities using empirical data from the 2020/2021 survey, this will provide pivotal information about the behavior of the farmers during the crisis and then with contemporary research, suggest effective containment measures should in case animal-to-human infection is observed. To save lives, protect the less privileged, ensure smooth and sustainable farming activities and growth and restructuring and resilience should be the major priority of the government. This research suggests the following recommendations

Proactive biosecurity measures: to be bio-secured, it is important to take proactive measures to avoid the negative impact of previous lockdowns on the agricultural sector.

- Sensitization of livestock farmers and their value chain operators on:
 - Fumigating the environment to reduce insect carrier diseases
 - Regular sanitizing farm kits and equipment
 - Regular washing of hands with soap even after using sanitizers
 - Wearing a facemask, especially on enclosed farms
 - Reduction of non-farmers on farms.
 - Constant availability of clean water
 - Regular and timely vaccination of livestock
- Identify the best and most effective means of communicating
- Readily available bio-security kits, equipment, and vehicles in cases of emergencies
- Readily and timely available vaccines, drugs, and supplements.

Re-active biosecurity measures: cases come even when all measures are taken to prevent them but the most important is the steps taken to control the situation to reduce its impact.

- Quick dissemination of information to farmers and the public of any outbreak to save other farms or species or even humans from getting infected.
- Separating infected livestock species from other livestock
- Enforcement of movement control of infected farms and their products
- Sanitization of the whole farm

Policy recommendations: these are long-time plans that need to be considered to improve the livestock subsector.

- Complete restructuring of the livestock sub-sector. Easy tracking.
- Enforcing regular inspection of farms and rating (grading) hygiene for public notice.
- The use of ICT to inform, and control outbreak crises. For instance, the development of a mobile application that allows farmers to input bio-information about livestock with symptoms
- Financial support to infected farms with strict rules to encourage a continual supply of safe food.
- Establish State-pricing system that can reduce highly volatile feed prices. This should involve key stakeholders such as crop farmers.
- Ensuring an adequate supply of vaccines with livestock medicines or supplements (immune boosters).
- Ensuring that a standard vet doctor-to-farm ratio is maintained across the state.

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